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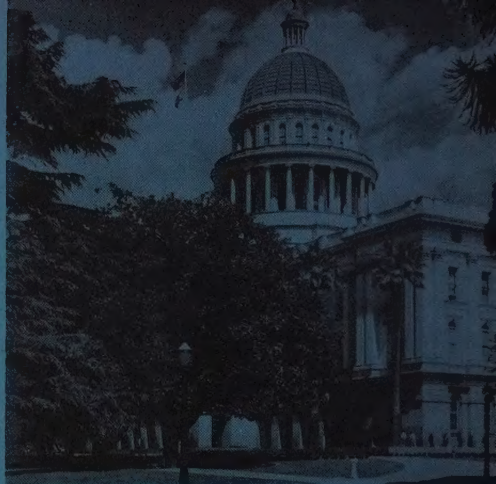
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OUR COVER: Agricultural Statistics. See page 263 for list of reports issued by the California Crop and Livestock Reporting Service.

The *Quarterly Bulletin*, published as a contribution to the welfare of California Agriculture, is mailed free to California citizens interested in the work of the Department of Agriculture. The *Bulletin* is exchanged, on request, for publications of the Federal Government, Experiment Stations, and other state or national agricultural offices or organizations.

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California Crop and Livestock Reporting Service

NIELS I. NIELSEN, Chief, W. WARD HENDERSON, Assistant Chief
Bureau of Agricultural Statistics



Niels I. Nielsen, Chief, Bureau of Agricultural Statistics.

Ten years before the world-famous gold rush in California, and nine years before James Marshall made his historical gold discovery at Coloma, the furthest thing from the minds of the early California settlers was agricultural statistics. Not so in Washington, D. C., however, because it was then, in 1839, that the Congress of the United States authorized the Patent Office to spend \$1,000 for the distribution of seeds and the collection of agricultural statistics.

As history has recorded the events of a vital segment of agriculture, that \$1,000 was the first move in response to a need which eventually resulted in the Crop and Livestock Reporting Service as we know it today.

The Crop Reporting Service is as old as the United States Department of Agriculture itself, dating officially from 1862. In

the early development of our Country, agricultural production was almost entirely for local consumption. Production in one area, as a general rule, had little or no effect on prices in other areas.

All this changed with the expansion of rail transportation. With the development of railroads, the farmer without information on crop prospects in competing areas was in a very vulnerable position. To meet the problem, farmers and others connected with agriculture could have established their own crop reporting service. However, that would have been impractical for many reasons—the main one being that if the crop figures were to have the confidence of all concerned, they must be compiled by a neutral party having no financial interest in the products being reported.

First Monthly Report in 1863

The first monthly report on crop conditions, based on information received from volunteer crop reporters, was published in the summer of 1863. In 1866, annual reports on acreage, yields, production, and December 1 average prices were initiated. In 1867, the first reports of values per head of major species of livestock on farms appeared.

Shortly after the turn of the century, California received the services of a special USDA field agent. John E. Rickards, former governor of Montana, and an employee of the U. S. Bureau of Statistics, was sent to California on July 1, 1903. Designated field statistician, he was employed part time by the Federal Government. Two and one-half years later he was appointed to a full-time status, but was without clerical help or an official office. In 1911, the need for assistance was recognized, and the Bureau of Statistics set up an office in the Old Custom House in San Francisco, where it remained until 1920.

During the period between 1911 and 1920, the Crop Reporting Service in California

began to feel some "growing pains." On January 1, 1917, E. E. Kaufman, a former field agent in North Dakota, Arizona, and New Mexico, was appointed field agent in the San Francisco office. It was at this time that crop reporting began to be specialized, since Kaufman was to give primary attention to fruit estimates.

In 1920, the late G. H. Hecke, director of the newly-formed California Department of Agriculture, reporting on "The Importance of Farm Statistics," said: "*There is probably no feature involved in our present-day agricultural economy that touches so large a number of people in varied activities, and upon which such a large degree of ultimate success depends, as does the availability of accurate and timely crop reports.*"

There is no single feature of crop reporting that can be accomplished successfully without the expenditure of most scrupulous care and attention, and the reduction of the work to a basis which will fulfill its obligations in the quickest way with dependable results will be one of the triumphs of the day. There is no other medium that will so largely aid an agricultural state in promoting its natural farm, orchard, or animal resources as will the availability of accurate, dependable farm figures, and to this end we should lend our energies that the periodic assembling of such vital statistics be made an assured fact and a permanent institution for the advancement of California agriculture."

Thus was the thinking of the man who directed the welfare of California's agriculture in 1920. Director Hecke is known as the "Father of the California Department of Agriculture."

At the close of the Fiscal Year 1919-1920, it became evident that the work of the Federal Bureau of Crop Estimates would suffer in California due to a shortage of travel funds. It was then that Director Hecke came to the rescue with state funds to provide travel expenses for a statistician. A temporary agreement was made whereby the Crop Reporting Service for the State of California was placed on a co-operative basis. It was this rescue act that provided the birth of the co-operative Crop Reporting Service in California.

E. E. Kaufman, First Statistician

With the co-operative arrangement came the title of "agricultural statistician," a posi-

tion which was first filled by Mr. Kaufman, and his office became part of the executive branch of the California Department of Agriculture in Sacramento. Mr. Kaufman retired in 1938 and was succeeded by George A. Scott, who was in charge until his retirement in October, 1956.

The State's program is carried out today through the Bureau of Agricultural Statistics, of which federal agricultural statisticians serve as chief and assistant chief. The

CALIFORNIA CROP AND LIVESTOCK REPORTING SERVICE STAFF (Bureau of Agricultural Statistics)

Niels I. Nielsen, Chief

W. Ward Henderson, Assistant Chief

Field Crop and Price Statistics

Lowell M. Clarke, Head

George N. Tucker, Jr., Agricultural Statistician

James M. Kitterman, Agricultural Statistician

Rudolph J. Klement, Agricultural Statistician

Livestock, Dairy, and Poultry Statistics

Cecil W. Estes, Head

Howard J. Stover, Associate Research Technician,
Bureau of Milk Control (collaborator USDA
for milk statistics)

James H. Swedberg, Agricultural Statistician

Duane E. Flaten, Agricultural Statistician

Fruit and Vegetable Statistics

(Vacant) Head

William J. Fink, Agricultural Statistician

Lawrence A. Losleben, Agricultural Statistician

Harry Friesen, Assistant Marketing Specialist

Taylor, David N., Agricultural Statistician

Walter L. Quincy, Agricultural Statistician

Service-related Research

George R. Harvey, Head

Francis H. Belmont, Agricultural Statistician

Lowell D. Glenn, Agricultural Statistician

Mary Alice Felt, Statistical Supervisor

Henrietta H. Zambon, Assistant Statistical Supervisor

George A. Chan, Administrative Assistant

Genevieve M. Teel, Secretary

work of the Bureau of Agricultural Statistics includes statistical programs, some fully and some partially financed under state statutes and appropriations. These statistical programs are carried on so as not to conflict with, but rather to amplify the federal reporting services. The amplification consists of supplying additional types of data that the state authorities believe will benefit the state and local agricultural interests. The State also has the responsibility of developing improved and correlated crop estimating activities that are of importance to intrastate as well as local marketing programs.

The national program of crop and livestock estimates and reports is carried on by the Federal Department of Agriculture under congressional authority and funds. The program consists primarily of estimates that provide state and national summaries of current agricultural production, prospects, supplies, prices, and other data which reflect the agricultural situation.

Since 1920, when the federal and state statistical programs were first brought together in California, the combined operation has been known as the California Crop and Livestock Reporting Service. The consolidation of the federal and state resources for agricultural statistics has provided a more efficient and economical reporting service by eliminating wasteful duplication of effort. This co-operative merger has also made possible the collection and publication of state, county, and area statistics on a standard or uniform basis.

The staff of the California Crop and Livestock Reporting Service totals 35, of which 15 are agricultural statisticians and 20 are clerical employees. Ten members of the staff are state employees, and 25 members are federal employees. The State also pays a part of the salary of some federal employees, which makes the total state salary contribution equal to about 12 full-time employees.

Qualifications of Statisticians

As a general rule, the agricultural statisticians are classified under federal civil service. To enter the service as an agricultural statistician, it is necessary to pass the federal civil service examination for that classification. The following qualifications are required to take the examination for employment as an agricultural statistician: four years of study in a college or university, with nine semester hours in statistics or mathematics, of which six are in statistics, and nine semester hours in agriculture or agricultural economics. Upon entering the service, all employees must certify that they have read and will abide by the official regulations governing the preparation and issuance of the monthly crop reports and other official crop and livestock estimates prepared by the Crop Reporting Board. The following regulation will make clear the steps that have been taken to maintain the integrity of the service:

"Whoever, being an officer or employee of the United States or a person acting for or on behalf of the United States, in any capacity under or by virtue of the authority of any department or office thereof, and while holding such office, employment, or position shall, by virtue of the office, employment, or position held by him, become possessed of any information which might exert an influence upon or affect the market value of any product of the soil grown within the United States, which information is by law or by the rules of the department or office required to be withheld from publication until a fixed time, and shall wilfully impart, directly or indirectly, such information, or any part thereof, to any person not entitled under the law or the rules of the department or office to receive the same; or shall, before such information is made public through regular official channels, directly or indirectly speculate in any such product respecting which he had thus become possessed of such information, by buying or selling the same in any quantity, shall be fined not more than \$10,000 or imprisoned not more than 10 years, or both."

There is a third source of funds that support the California Crop and Livestock Reporting Service, that being industry itself. These funds may accrue on a regular or a sustaining basis, as in the case of the monetary support from the dairy industry, provided to maintain the dairy statistics program. In some cases, service-related research activities are undertaken to refine the accuracy of forecasts for some particular crop. These activities are supported by Federal Research and Marketing Act funds, matched by funds from the industry concerned. However, there are cases, such as the tree fruit acreage estimates, where the State puts up the matching funds. Projects on the "objective method" of forecasting production have been undertaken at the request of the Cling Peach, the Bartlett Pear, and the Wine Advisory Boards, and are supported by matching funds from these boards. Sometimes an industry will supply all the funds for a survey to obtain information not included in existing programs; an example of this is the October raisin forecast, requested and financed by the Raisin Administrative Committee. Such special reports are handled in the same manner and within the regulations governing the regular activities of the service.

California is the number one ranking agricultural State in the Nation on the basis of cash receipts for agricultural products, but prices received for most crops grown here are affected by production and prices received elsewhere in the United States and, in some cases, by what is produced in foreign countries. Therefore, it is of utmost

importance that California producers have knowledge of prospective and actual production within the State and in all competing areas. This information is important to those who market the farmer's product, as well as to those who sell the things the farmer has to buy to produce his crops.

Information Is Public Property

It is the function of the Crop and Livestock Reporting Service to gather and provide information on crop and livestock production, prices, stocks in storage, and other pertinent data that might have a bearing on the agricultural economy of the State. The official crop and livestock estimates and reports are public property, and must be made available on an equal and impartial basis. There is strict adherence to predesignated release dates.

The service may be described as a clearing house through which farmers and others engaged with agriculture exchange information. By exchange, the farmer provides statistics on his own operations and, in turn, receives tabulated statistics on competing areas and the Nation. This voluntary and direct co-operation on the part of the farmer and others is the backbone of the Crop Reporting Service. Regular reporting is necessary in order to obtain a true picture of conditions at a particular time.

There are approximately 21,000 "reporters" co-operating with the California Crop and Livestock Reporting Service, a fact which in itself is indicative of the extensive and varied nature of the State's agriculture. The average reporter receives four to five questionnaire forms a year. There are, however, others such as the general farm reporters who receive more.

Co-operation with the service is, for the most part, very satisfactory. One point not fully understood by some in agriculture is that the Crop and Livestock Reporting Service is purely a statistical agency that renders an informational service to all concerned. It has no other interest, yet it is a service of fundamental importance to the Nation. Perhaps the best way to look at it would be to try to visualize the situation that would prevail if such an agency as the Crop Reporting Service did not exist. Certainly much false and misleading information on crop and livestock prospects would be in circulation. What reliable information would be

available upon which to base the solution to our agricultural problems? The Crop Reporting Service has no direct interest in farm programs, but the people concerned with agricultural legislation, marketing orders, etc., must have accurate and unbiased information on which to operate. Early in the year each state office receives a schedule of due dates and release dates from the National Crop Reporting Board in Washington, D. C., the nerve center of the service. The due date schedule, for the most part, governs the field office operations for the year.

Reports Start With Questionnaire

The preparation and release of the monthly crop report can be used as a typical example of the way the service functions, and of the rapidity with which reports are handled.

To begin, a farm report form or questionnaire is the starting point of the monthly crop report. It is used to obtain the basic information needed, and is sent to all farm reporters about the twenty-fourth of the month. This questionnaire is the same one used in other states where about the same crops are grown, and where harvest occurs at about the same time, but it differs from report forms used in states where there is a marked difference in crops grown or progress of growth.

The completed questionnaire must be back in the state office within seven days or not later than the first of the following month, "the closing date." Reports received after that date are too late for inclusion in the monthly tabulations. The reporter, therefore, has no more than one week to get his report to Sacramento, while the Crop Reporting Service in turn has a maximum of only four days to summarize the large amount of information obtained from the questionnaire and to make the necessary forecasts and estimates in the form of recommendations to the National Crop Reporting Board in Washington, D. C.

On the closing date in the Sacramento office, all reports are edited and added. The editing is done by the agricultural statisticians, and consists of scanning each row of figures to make sure that none of the figures differs so much from the others as to indicate either a misunderstanding on the part of the reporter or a misplaced entry on the schedule. Most questionable entries are either

PLEASE MAIL BY
NOVEMBER 1, 1957

FARM REPORT
CALIFORNIA CROP AND
LIVESTOCK REPORTING SERVICE
 P.O. Box 1125
 Sacramento 6



Keep the Crop Reports Circular—
 Please keep all crop reports available to
 compile the basic crop information which forms
 the basis of the service.
 This service depends on your accurate and
 timely reports. Keep to the good work. Please re-
 member too.

1. Note the special instructions.
 2. Mail your report promptly in the enclosed
 envelope which needs no return address.
 Nick L. Nielsen
 Agricultural Statistician
 P. S. Individual reports are kept confidential.

"Farm Talk Post"

SPECIAL INSTRUCTIONS

- Please report the condition of crops now, as compared with the normal growth and vitality you would expect at this time (if there had been no damage to crops by drought, flood, insects, etc.). Let 100 percent represent a full crop for fruits or a normal condition for field crops.
- Symbols To Be Used
 Use cipher (0) only when zero or none is meant.
 Use letter (P) to indicate an entire failure.

Name _____
 Post Office _____ R. D. No. _____
 County _____ Township _____
 Date mailed _____

C.E. 2-438
 Call
 November 1957

Collocate
 Answer
 here

Please Answer These Questions
 For Your Locality

FRUIT AND NUT CROPS	
APPLES, condition in percent	of a full crop — PERCENT
PEARS, other than Bartlett, condition in percent	of a full crop — PERCENT
WINE GRAPES, condition in percent	of a full crop — PERCENT
RAISIN GRAPES, condition in percent	of a full crop — PERCENT
TABLE GRAPES, condition in percent	of a full crop — PERCENT
NAVEL and miscellaneous ORANGES (1957 bloom), condition in percent of a full crop	— PERCENT
VALENCIA ORANGES (1957 bloom), condition in percent of a full crop	— PERCENT
VALENCIA ORANGES (1956 bloom), yield per 100 trees — PACKED BOXES	PERCENT of a full crop
LEMONS (1957 bloom), condition in percent of a full crop	— PERCENT
LEMONS (1956 bloom), yield per 100 trees — PACKED BOXES	PERCENT of a full crop
GRAPEFRUIT, condition in percent	— PERCENT
PUERTO AVOCADOS (1957 bloom), condition in percent of a full crop	— PERCENT
OLIVES, condition in percent	— PERCENT
FIGS, condition in percent	— PERCENT
ALMONDS, condition in percent	— PERCENT
VALNUTS, condition in percent	— PERCENT
FIELD CROPS	
MILCO, "pp", etc. (late oranges), yield per acre this year in 2,000-pound TONS	— TONS
MILCO, "pp", etc. (late oranges), yield per acre for village this year, gross weight, in 2,000-pound TONS	— TONS
CORN, Indian, (not milco, "pp", etc.), yield per acre this year in bushels of 56 pounds (not in weight) to 70 pounds (in ear) — BUSHELS	— BUSHELS
CORN SILAGE, yield per acre this year in 2,000-pound TONS	— TONS
RICE, yield per acre this year in 100-pound BAGS	— BAGS
SUGAR BEETS for sugar, yield per acre this year in 2,000-pound TONS	— TONS
SWEET POTATOES, yield per acre this year in 50-pound BAGS	— BAGS
LIMA BEANS, large (standard), yield per acre this year in 100-pound BAGS	— BAGS
LIMA BEANS, baby, yield per acre this year in 100-pound BAGS	— BAGS
BEANS, other than lima, yield per acre this year in 100-pound BAGS	— BAGS

Over, please

C.E. 2-438
 Call
 November 1957

Please Answer These Questions
 For Your Locality

FIELD CROPS	
ALFALFA HAY, yield per acre (all cuttings combined) this year in 2,000-pound TONS	— TONS
PASTURE condition in percent	— PERCENT
HAY and OTHER ROUGHAGE, supply on farm or ranch in percent of normal without due — PERCENT	— PERCENT
ALL CROPS, condition in percent of normal — PERCENT	— PERCENT
Please Answer These Questions For The Farm or Ranch You Operate	
DAIRY	
COWS MILKED on this farm or ranch yesterday — NUMBER	— NUMBER
ALL MILK COWS on this farm or ranch yesterday (both dry and in milk) — NUMBER	— NUMBER
MILK PRODUCED on this farm or ranch yesterday	POUNDS or GALLONS
Report in either	
POULTRY	
HENS (including pullets of laying age) in your flock yesterday — NUMBER	— NUMBER
EGGS produced by your flock yesterday — NUMBER	— NUMBER
PULLETS one year of laying age on hand	— NUMBER
FARM WORK	
Report work on this farm or ranch (including chores) during week of Oct. 20-26:	
OPERATOR on this farm days during the week did you work on this farm — DAYS	— DAYS
OTHERS IN YOUR FAMILY who worked 15 hours or more during the week on this farm or ranch without receiving cash wages — PERSONS	— PERSONS
ALL OTHERS (who did farm work) hour or more for pay on this farm or ranch during the week — PERSONS	— PERSONS
Please Answer These Questions For Your Locality	
FARM LAND VALUES	
IRRIGATED LANDS with improvements	Average value per acre this year — \$
Average value per acre last year — \$	
DRY FARMING LANDS with improvements	Average value per acre this year — \$
Average value per acre last year — \$	
NONIRRIGATED GRAZING or PASTURE LANDS with improvements	Average value per acre this year — \$
Average value per acre last year — \$	

Over, please

In reporting values for your locality, use the following symbols: "0" for none; "P" for no report; "1" for one; "2" for two; "3" for three; "4" for four; "5" for five; "6" for six; "7" for seven; "8" for eight; "9" for nine; "10" for ten; "11" for eleven; "12" for twelve; "13" for thirteen; "14" for fourteen; "15" for fifteen; "16" for sixteen; "17" for seventeen; "18" for eighteen; "19" for nineteen; "20" for twenty; "21" for twenty-one; "22" for twenty-two; "23" for twenty-three; "24" for twenty-four; "25" for twenty-five; "26" for twenty-six; "27" for twenty-seven; "28" for twenty-eight; "29" for twenty-nine; "30" for thirty; "31" for thirty-one; "32" for thirty-two; "33" for thirty-three; "34" for thirty-four; "35" for thirty-five; "36" for thirty-six; "37" for thirty-seven; "38" for thirty-eight; "39" for thirty-nine; "40" for forty; "41" for forty-one; "42" for forty-two; "43" for forty-three; "44" for forty-four; "45" for forty-five; "46" for forty-six; "47" for forty-seven; "48" for forty-eight; "49" for forty-nine; "50" for fifty; "51" for fifty-one; "52" for fifty-two; "53" for fifty-three; "54" for fifty-four; "55" for fifty-five; "56" for fifty-six; "57" for fifty-seven; "58" for fifty-eight; "59" for fifty-nine; "60" for sixty; "61" for sixty-one; "62" for sixty-two; "63" for sixty-three; "64" for sixty-four; "65" for sixty-five; "66" for sixty-six; "67" for sixty-seven; "68" for sixty-eight; "69" for sixty-nine; "70" for seventy; "71" for seventy-one; "72" for seventy-two; "73" for seventy-three; "74" for seventy-four; "75" for seventy-five; "76" for seventy-six; "77" for seventy-seven; "78" for seventy-eight; "79" for seventy-nine; "80" for eighty; "81" for eighty-one; "82" for eighty-two; "83" for eighty-three; "84" for eighty-four; "85" for eighty-five; "86" for eighty-six; "87" for eighty-seven; "88" for eighty-eight; "89" for eighty-nine; "90" for ninety; "91" for ninety-one; "92" for ninety-two; "93" for ninety-three; "94" for ninety-four; "95" for ninety-five; "96" for ninety-six; "97" for ninety-seven; "98" for ninety-eight; "99" for ninety-nine; "100" for one hundred.

The farm report form is the starting point of the monthly crop report. This report is sent to all farm reporters about the twenty-fourth of each month.

deleted or moved into appropriate columns, but some that are apparently not attributable to misunderstandings may be left in to represent minority situations in a given county. Editing, a safeguard against errors which otherwise would almost certainly occur, is necessarily a rather subjective operation, and is done carefully by technicians thoroughly familiar with what is being reported, the area involved, and the types of frequency distribution that can be reasonably expected.

After the necessary additions and counts have been made by the clerical force, each operation is checked by a clerk other than the one who did the work. This is a double-check on the overall accuracy of the report.

The next step is to transfer the reports to summary sheets, where averages for the county, district, and State are computed.

During the last few days of the month, while the reports are coming in to the state office, several of the statisticians travel in the more important crop-producing areas of California. These travels might be termed "eyewitness accounts" of the crop picture. The statisticians personally appraise the prospects of crop yield. They talk with interested and informed persons, such as the county agricultural commissioners, county farm advisors, operators of grain elevators, packing and processing plants, local produce dealers, and the farmers. Back in the office, they interpret the indications derived from

the farm reports in the light of the statisticians' pooled observations and conversations.

By established techniques, a statistician's recommendation is made for each crop or item on the farm report, and these recommendations are entered on the "statistician's summary sheet," which is prepared in duplicate. Comments are written on special forms, using a separate sheet for each item or group of related items. The comments are general statements on the weather during the month, and the effect of temperatures and precipitation on the production of crops, the production of milk and eggs, and other items being estimated. Also included are statements about the progress of various crop operations, the state of maturity of unharvested crops, the statistician's appraisal of survey indications, and his interpretation of all available data. The comments on crop and livestock conditions made by reporters on their farm report questionnaire are invaluable to the statisticians in properly interpreting the indications.

Comments and summary sheets are sent air mail special delivery to the Crop Reporting Board in Washington, D. C., about the fourth of the month.

Crops Have Two Classifications

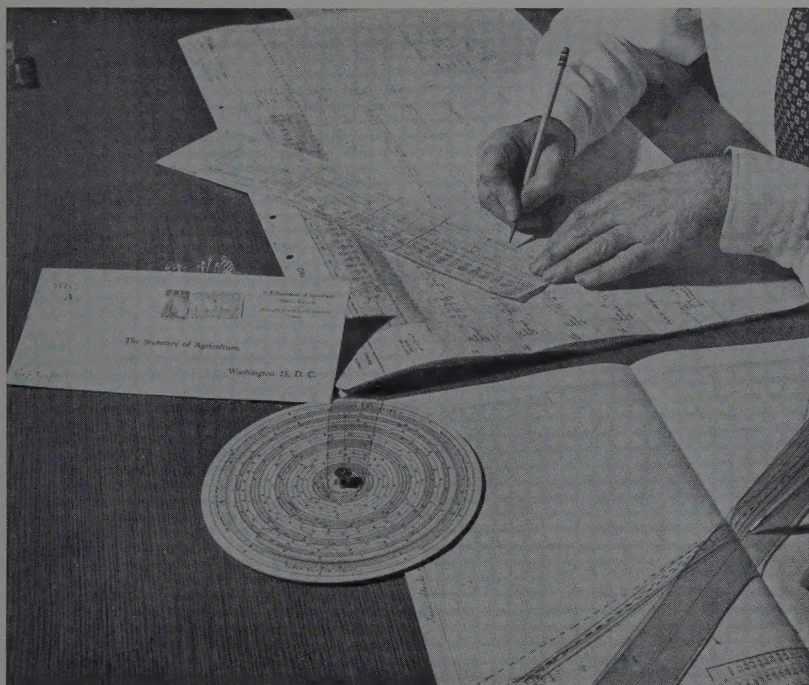
It should be noted at this point that crops receive two classifications: Corn, oats, wheat, soybeans, and cotton are "speculative" crops; all others are called "nonspeculative." Speculative crops have been designated as such because of the large volume of future trading in these commodities on organized exchanges. States in which the production of a given speculative crop is so great that forecasts or estimates of production of those states have a direct effect on the total production of the Nation, for that given crop, are called "speculative states." It can be seen that advance information on a speculative crop would give those in possession of it an unfair advantage in the conduct of their trading.

Reports on the nonspeculative crops are forwarded on or about the fifth of each month. Reports on the speculative crops, except cotton, are not due in Washington until the tenth of the month.

An interesting point in distinguishing the two classifications, aside from their mailing or due date, is the fact that speculative crop



Henrietta Zambon, supervisory statistical clerk in the office of the Bureau of Agricultural Statistics, at Sacramento, tabulates volunteer crop reporter data.



A state statistician checks a report to assure final accuracy. Many tools of the trade such as calculating machines, slide rules, and interpretive and forecasting charts are used in reducing the local information gleaned from thousands of questionnaires sent in by volunteer crop reporters. USDA photo.

reports are sent to the Secretary of Agriculture under code "A," and the nonspeculative reports are sent to the Crop Reporting Board under code "C." Code "A" or speculative reports receive special handling that involves the utmost security measures, and are sometimes referred to as "lockup" reports.

The real activity of the National Crop Reporting Board begins with the arrival of the nonspeculative report from the states on or about the seventh of each month.

In Washington, D. C., a member of the Crop Reporting Board reviews the state statistician's report and, using similar techniques followed by the state statistician, arrives at his own recommendation for each item reported. If, for any item, his recommendation does not agree with the state statistician, he makes out a "change slip"

form stating the reasons for the difference in opinion. This, generally speaking, completes the first phase of the nonspeculative report review.

In the second phase, members of the Crop Reporting Board are assigned individual commodities to review. Pairs of commodity reviewers review all estimates, recommendations, and change slips, and approve or disapprove changes that have been made. They also make additional changes if facts and figures warrant. In the final analysis, all changes on state reports, made by the reviewers in Washington, are approved or disapproved by the Chairman of the Crop Reporting Board. Where possible, they are checked back with the state concerned. Approved changes are sent to the board's computing unit as well as to the state concerned.

In the final phase, computations are made which include production and yield for the entire United States. Comments are written for the entire report, and the report is ready for release.

Secrecy of Lockup Reports

The story of the "lockup" reports begins on the day that the nonspeculative report is complete. "Lockup" or speculative reports are sent separately to Washington and, as pointed out, are addressed code "A" to the Secretary of Agriculture. As they arrive in Washington, the chief of the Secretary of Agriculture's record section places them, unopened, in a special mailbox that is secured by two locks. The key to one lock is in possession of the secretary of the Crop Reporting Board, and the other is in possession of a representative of the Secretary of Agriculture. As an added security measure, the mailbox is kept in a locked room.

On the day that the nonspeculative report is complete, three members of the Crop Reporting Board—the secretary, the chairman, and a third member—along with a representative of the Secretary of Agriculture, go to the locked mailbox accompanied by an armed guard. There they remove the re-

ports. They then go to a specially designated wing in the Department of Agriculture Building, where they are locked in. As added security, all blinds are lowered, closed, and sealed. No one may open or even adjust the blinds while the board is in session. All telephones in the wing are disconnected, and all entrances are locked and guarded. Until the appointed hour of release of the speculative reports, no one may leave the locked quarters, and only employees who carry special passes are allowed to enter. Those entering may not leave until the hour of release. This is where the term "lockup" originates.

Behind all this security, the materials for each speculative state are placed in a folder with that state's nonspeculative report. The review of the reports takes on a more detailed procedure at this time. Instead of a review of each state by only two members of the board, each member of the board makes his own interpretation of the data for each of the speculative items for each of the states. The secretary of the Crop Reporting Board records the recommendations of all members of the board on a separate summary sheet for each speculative crop. The chairman reviews these recommendations, and, if members are in disagreement concerning any item, they discuss and review the situation until an agreement is reached.

When forecasts or estimates have been adopted for all states for a given crop, they are entered on computation sheets that already contain the nonspeculative states' data. It should be kept in mind that in this "lockup" the only reports reviewed are those for corn, oats, wheat, and soybeans. (Cotton is handled as a separate "lockup" report, usually on the eighth day of the month, and is released at 11 a.m.) The necessary computations are made and national production and yield per acre are computed. After this, tables containing the data are stenciled, and board members write comments on the speculative commodities for which they are responsible.

Mimeograph machines are brought into the quarters the night before so that the report can be processed inside the locked quarters. Finally, and only shortly before the report is released, the entire report (speculative and nonspeculative) is assembled.



Every window in the rooms where the crop report is prepared is tightly shuttered, using a special device to prevent signals from within. USDA photo.

The Secretary of Agriculture enters the lockup quarters about 2.45 p.m. and reviews the report prior to signing it.

Board Proceeds Under Guard

Two or three minutes before 3 p.m., the chairman and secretary of the board, accompanied by a few members, leave the lockup quarters and proceed under guard to the release room, "looking neither to right nor left and speaking to no one or acknowledging any greeting," according to regulations.

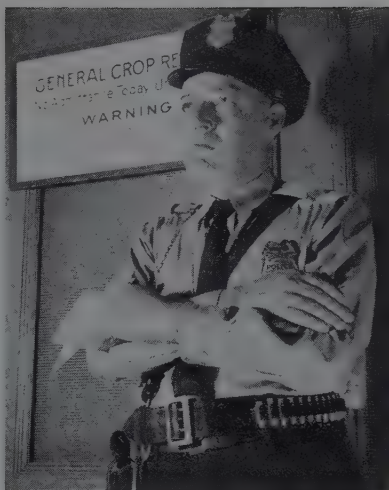
In the release room, telephone and telegraph instruments are ready for transmittal of the report. When the chairman enters the release room, he places one report, face down, beside each telephone and telegraph instrument. All persons present stand within a specified space, and at exactly 3 p.m., by a Western Union clock on the wall, a representative of the Secretary of Agriculture says "GO!" and the reporters from the newspapers, press services, and brokerage houses rush to their instruments and begin sending out the reports.

The hour of 3 p.m. has a special significance in that it is the time when the release of the report gives everyone an equal chance at the report. No advantage is gained on the east or west coast by even the difference in time zones. All grain commodity exchanges have been closed, so there can be no more future trading that day. Cotton exchanges close for 15 minutes during the release of the cotton report and then reopen for trading.

When the report is released to the outside world, all security measures are relaxed and a telegram is dispatched to each state statistician with all changes in estimates, plus the national estimates. At the same time, a complete copy of the release is sent airmail special delivery to each state office.

Here in California, allowing for the difference in time zones, the telegram usually arrives about 1 p.m., while the airmail copy of the report generally arrives the following day.

It is against the law for a state office to release figures that come under the federal program until they have been approved and released by the National Crop Reporting Board. This rule eliminates the chance of releasing figures that are in error and, at the same time, provides an equal release time for everyone concerned.



All entrances are locked and guarded until the appointed hour of release of speculative reports. Here a United States special police guard protects the entrance to the room where the "lockup" reports are prepared. USDA photo.

Release of Report in California

While all this is going on in Washington, the California Crop and Livestock Reporting Service is not idle, since much preliminary work is necessary in preparing for the state release. As soon as the crop report telegram is received, a brief statement containing the highlights of the report for the State of California is prepared. This report is immediately given to the information officer of the State Department of Agriculture, who makes it available to press, radio, and television. The following day when the national board's release arrives by mail, an expanded report is prepared and distributed to the public.

Information gathered only under the state program does not have a fixed release date, unless tied in with a national report. In all other respects the information is gathered and prepared in the same manner as under the federal program.

The California Crop and Livestock Reporting Service releases more than 300 separate reports annually containing information on every important crop and livestock item in the State. These reports are available free



At exactly 3 p.m. by a Western Union clock on the wall, a representative of the Secretary of Agriculture says "GO!" and the reporters from the newspapers, press services, and brokerage houses rush to their instruments and begin sending out the reports. USDA photo.

upon request but, in return, it is expected that producers and others concerned with the State's agriculture will co-operate by answering the requests for information mailed out by the service. Without the co-operation of growers, dealers, processors, shippers, and others, it would be impossible for the California Crop and Livestock Reporting Service to render this fundamental service to agriculture. Federal and state laws do require some companies to report on certain items, such as cotton ginnings and the receipts and sales of milk and dairy products.

For the most part, the farm reporter works voluntarily with no compensation other than the knowledge that he is pooling his information for the common good, and

that official crop reports are more accurate because of his help.

The reporting work of the Crop and Livestock Reporting Service has always been completely separated from the function of taxation and production control. Individual crop reports are confidential and are not available to taxation or production control authorities nor, in fact, for any purpose or on any basis that would divulge the information furnished by an individual reporter. Knowledge of this, on the part of farm reporters, has removed one of the most serious psychological barriers to full co-operation.

The table on opposite page summarizes the reports released by the California Crop and Livestock Reporting Service and shows the frequency of their issue:

<i>Title of Reports</i>	<i>Commodities covered</i>	<i>Frequency of issue</i>
Field crop reports	Grains, hay, beans, rice, flax, potatoes, sugar beets	Monthly, except January, February, and December
Grain stocks	Grains in all positions	Quarterly
Rice stocks	Rice in warehouses, mills	Monthly
Rice stocks	Rice on farms	October, January, April, August
Fruit and nut crops	All major fruits and nuts	Monthly
Fruit and nut acreage	Acreage by counties and varieties	Annually
Vegetable crop notes	All major commercial vegetables	Semimonthly
Cotton reports	Cotton	Monthly (July-December)
Field seed crops	Alfalfa, alsike, ladino, sudan, vetch seed, etc.	Periodically in season
Livestock reports	Livestock and wool; pig and lamb crops; slaughter; market feeding	Monthly and periodically
Poultry and egg reports	Chicken, egg and turkey production and hatchings	Monthly
	Hatchings all chicks, and placements of broiler and fryer chicks	Weekly
	Poult hatchings	Weekly
Honey reports	Honey and wax	Periodically
Farm commodity prices	Major commodities, except vegetables and most fruits	Monthly
Dairy bulletin	Milk production and utilization; manufactured dairy products	Monthly

In addition to the above, annual summary reports are issued covering each major commodity group listed above. Special releases pertaining to one or more commodities are also made from time to time, some of which include longtime statistical series.

CALIFORNIA FARM PRODUCTION AND VALUE

Revised estimates will appear in the January-February-March, 1958, issue of the Quarterly Bulletin

Preliminary Estimates of the Production and Value of Principal Products of California Farms in 1956

Commodity	Acreage	Production	Value of production
Dairy products .....	.....	7,013,000,000 lbs. (sold)	\$329,803,000
Cattle and calves .....	.....	1,918,595,000 lbs. (sold)	325,951,000
Cotton lint	749,000	1,446,000 bales (500 lb. gross)	236,390,000
Cottonseed .....	.....	577,000 tons	35,832,000
Hay	2,084,000	6,822,000 tons	153,495,000
Eggs (chicken) .....	.....	4,394,000,000 (no. sold)	145,002,000
Grapes	407,507	2,624,000 tons	126,288,000
Oranges	151,857	38,770,000 boxes (77 lb.)	109,087,000
Tomatoes	189,400	3,054,800 tons	107,532,000
Potatoes	106,800	25,872,000 cwt.	95,179,000
Barley	1,838,000	68,006,000 bu. (48 lb.)	76,847,000
Lettuce	128,500	20,757,000 cwt.	74,174,000
Peaches	79,063	953,000 tons	65,521,000
Turkeys .....	.....	12,210,000 head (sold)	60,763,000
Rice	286,000	11,726,000 cwt.	49,836,000
Chickens (all) .....	.....	246,181,000 lbs. (sold)	49,544,000
Almonds	88,609	58,600 tons	46,294,000
Strawberries	19,000	243,200,000 lbs.	41,216,000
Lemons	50,975	12,600,000 boxes (79 lb.)	39,690,000
Sugar beets	171,000	3,517,000 tons	38,687,000
Prunes	87,415	193,000 tons	37,436,000
Pears	38,583	425,000 tons	32,545,000
Beans (dry)	278,000	4,021,000 cwt.	32,168,000
Walnuts	113,922	69,000 tons	30,498,000
Celery	17,800	9,451,000 cwt.	29,603,000
Sheep and lambs .....	.....	164,050,000 lbs. (sold)	29,071,000
Alfalfa seed	188,000	78,960,000 lbs.	26,610,000
Apricots	38,125	186,000 tons	24,738,000
Corn (field)	216,000	14,472,000 bu. (56 lb.)	24,602,000
Carrots	24,400	6,254,000 cwt.	24,214,000
Asparagus	76,200	1,829,000 cwt.	21,735,000
Cantaloups	38,400	4,726,000 cwt.	19,531,000
Apples, commercial only	21,062	9,260,000 bu.	16,946,000
Wheat	393,000	8,253,000 bu. (60 lb.)	16,506,000
Hogs .....	.....	92,211,000 (lbs. sold)	15,447,000
Grain sorghums	182,000	9,828,000 bu. (56 lb.)	14,251,000
Plums	21,555	100,000 tons	13,920,000
Onions	9,900	3,492,000 cwt.	12,806,000
Olives	27,707	66,000 tons	11,550,000
Broccoli	27,000	1,483,000 cwt.	10,742,000
Cherries	9,359	34,300 tons	9,844,000
Beans, snap	7,900	50,500 tons	9,419,000
Avocados	19,119	15,700 tons	7,222,000
Wool ¹ .....	.....	15,487,000 lbs.	7,124,000
Beans, green lima	28,100	44,260 tons	6,905,000
Potatoes, sweet	12,000	876,000 cwt.	6,430,000
Cauliflower	12,600	1,983,000 cwt.	6,083,000
Corn (sweet)	18,100	1,207,000 cwt.	6,034,000
Watermelons	20,700	2,785,000 cwt.	5,729,000
Oats	197,000	6,304,000 bu. (32 lb.)	5,295,000
Brussels sprouts	5,400	594,000 cwt.	5,016,000
Honeydew melons	8,000	1,128,000 cwt.	4,875,000
Figs (all)	23,494	87,000 tons (fresh basis)	4,705,000
Honey and beeswax .....	.....	29,044,000 lbs. honey	4,553,000
Grapefruit	7,192	2,410,000 boxes	4,430,000

CALIFORNIA FARM PRODUCTION AND VALUE—Continued

Commodity	Acreage	Production	Value of production
Cucumbers	6,600	61,000 tons	4,085,000
Flaxseed	47,000	1,081,000 bu. (56 lb.)	3,946,000
Hops	5,300	7,155,000 lbs.	3,649,000
Peas, green	18,700	29,680 tons	3,512,000
Nectarines	3,633	19,000 tons	3,439,000
Cabbage	8,400	1,834,000 cwt.	3,287,000
Peppers, bell	3,800	437,000 cwt.	3,103,000
Artichokes	9,400	320,000 cwt.	3,072,000
Spinach	11,450	78,795 tons	2,772,000
Garlic	2,400	204,000 cwt.	2,742,000
Peppers, chili (dried)	3,610	5,880 tons	2,576,000
Ladino clover seed	18,000	4,770,000 lbs.	2,337,000
Dates	4,609	18,800 tons	1,993,000
Sudan grass seed	15,000	19,500,000 lbs.	1,268,000
Persian melons	2,000	180,000 cwt.	954,000
Vetch seed, purple	34,000	13,600,000 lbs.	884,000
Peas, dry, field	7,000	91,000 cwt.	564,000
Alsike clover seed	3,600	1,620,000 lbs.	494,000
Persimmons	518	2,500 tons	355,000
Mustard seed	1,800	2,610,000 lbs.	217,000
Rye	10,000	120,000 bu. (56 lb.)	143,000
Mohair .....	.....	27,000 lbs.	16,000

¹ Marketing year April-March.

Some of the estimates of crop values and cash receipts in the above table are subject to minor revisions when more nearly complete data on production and prices become available.

Besides the commodities listed, there are many relatively minor crops grown and a number of livestock and poultry commodities produced in the State for which official estimates are not made. Therefore, these data do not record total production nor total value of all farm commodities.

The figures for crops listed include quantities and values of the portions of those crops fed to livestock and poultry on farms where grown, and thus relate to the entire crop in each case, whether or not sold or fed in the year produced. The value figures for livestock, poultry, and their products represent the cash receipts by producers from the sales of same during the calendar year 1956. Thus, a combined total of the values listed in the table would include some duplication between the values of crops grown and the receipts from the sales of livestock, poultry, and their products.

A more acceptable measure of the overall annual value of the State's farm production is shown by the Department's estimates of the cash receipts from producers' sales of farm products during the calendar year. In these are included estimates for minor commodities. These estimates for 1954, 1955, and 1956 are shown in the following. During the 27-year period 1930 to 1956, inclusive, cash receipts from farm marketings by California farmers have exceeded those from any other state, except for the years 1940, 1941, 1942, 1947, and 1949 when California ranked second to Iowa in this respect.

CALIFORNIA CASH RECEIPTS FROM FARM MARKETINGS—1954, 1955, AND 1956

	From crops	From livestock and products	From government payments	Total
1954	\$1,613,407,000	\$905,520,000	\$14,802,000	\$2,533,729,000
1955	1,692,469,000	948,259,000	11,970,000	2,652,698,000
1956	1,829,774,000	989,921,000	17,370,000	2,837,065,000

CALIFORNIA CASH FARM INCOME

(In thousands of dollars)

Commodities	1951	1952	1953	1954	1955	1956 ¹
Field crops						
Food grains	70,827	94,701	86,336	65,275	65,692	64,679
Feed grains	75,560	83,843	74,622	95,076	83,634	98,026
Hay crops	84,388	99,197	66,238	69,558	91,089	81,590
Cotton and cottonseed	304,147	316,277	381,019	286,022	246,262	276,080
Other field crops	166,485	214,564	156,756	183,443	168,957	219,355
Totals	701,407	808,582	764,971	699,374	655,634	739,730
Commercial vegetable crops	354,407	336,815	339,335	332,535	381,757	389,913

CALIFORNIA CASH FARM INCOME—Continued

(In thousands of dollars)

Commodities	1951	1952	1953	1954	1955	1956 ¹
Fruit and nut crops						
Citrus fruits	132,790	127,154	137,291	137,315	137,019	154,551
Grapes	125,551	108,239	102,106	107,090	113,669	125,599
Main deciduous fruits	211,306	172,370	179,516	189,353	219,997	222,493
Tree nuts	49,936	46,877	40,854	45,439	76,152	77,382
Other fruit	25,927	27,967	34,826	35,107	39,070	47,735
Totals	545,510	482,607	494,593	514,304	585,907	627,760
Forest, nursery and greenhouse products	61,518	63,049	63,761	67,194	69,171	72,371
Totals, all crops	1,662,842	1,691,053	1,662,660	1,613,407	1,692,469	1,829,774
Livestock and poultry						
Cattle and calves	415,949	375,139	259,035	274,914	298,858	325,951
Hogs	33,320	27,371	25,900	23,382	18,850	15,447
Sheep and lambs	39,837	30,488	26,561	29,310	27,133	29,071
Wool	12,159	8,876	9,510	9,216	6,197	8,084
Turkeys	63,756	65,147	59,867	51,038	54,669	60,763
Chickens (including broilers)	71,003	67,397	60,167	56,724	55,105	49,544
Eggs (chicken)	139,113	132,383	182,166	136,097	149,425	145,002
Dairy products	279,866	320,589	326,501	300,853	313,056	329,803
Other livestock and poultry	14,954	26,118	21,543	23,986	24,966	26,256
Totals	1,069,957	1,053,508	971,250	905,520	948,259	989,921
Total cash receipts from sales	2,732,799	2,744,561	2,633,910	2,518,927	2,640,728	2,819,695
Government payments	13,490	11,206	10,040	14,802	11,970	17,370
Grand total	2,746,289	2,755,767	2,643,950	2,533,729	2,652,698	2,837,065

¹ Estimates for 1956 are preliminary.

ESTIMATED CALIFORNIA FARM INCOME FOR 12 PRECEDING YEARS

(In thousands of dollars)

Year	Cash receipts	Government payments	Totals	Year	Cash receipts	Government payments	Totals
1939	605,861	19,384	625,245	1945	1,851,273	39,618	1,890,891
1940	649,942	21,840	671,782	1946	2,170,784	45,729	2,216,513
1941	858,306	19,501	877,807	1947	2,149,551	13,004	2,162,555
1942	1,148,219	14,494	1,162,713	1948	2,149,221	13,611	2,162,832
1943	1,581,748	17,202	1,598,950	1949	2,076,391	9,220	2,085,611
1944	1,750,484	43,304	1,793,788	1950	2,273,898	13,641	2,287,539

Cash receipts from California farm marketing amounted to \$2,819,695,000 (excluding government payments) during 1956, setting a new record about 3 percent above the 1952 peak and nearly 7 percent above the 1955 total. This again placed California first among the states in this important measure of the farm economy, a position it has retained since 1950. California receipts accounted for 9.3 percent of the total national cash receipts from sales of farm products, although California farms represent only about 2.5 percent of all farms in the Nation.

Compared with 1955, current year's receipts show increases for feed grains, cottons, vegetables, and dairy products. Decreases are registered for food grains, hay crops, hogs, chickens and eggs. Price and production variations or a combination of both account for the differences in income between years.

Estimated cash receipts from farm marketings, commonly termed "cash farm income," represent the gross amounts received by farmers for farm products sold during the calendar year. They do not reflect differences in costs of production between commodities or years. These income estimates for crops should not be confused with crop-year value figures that appear in other summaries published by this office, and which represent farm values of crops harvested, regardless of the year in which sold; or whether sold, fed to livestock, or otherwise used.

The above cash farm income figures do not represent net income, nor can they be used as a proper measure of absolute or relative net earnings. Farm production expenses have increased greatly during the past several years, and remained high through 1956 so that the net income from farming is not proportional to annual cash receipts shown above.

RANKING OF CALIFORNIA'S PRINCIPAL CROPS AND LIVESTOCK, 1956

(Prepared by California Crop and Livestock Reporting Service)

Commodities	Rank in production among states, 1956		Percent of national production, 1956		Commodities	Rank in production among states, 1956		Percent of national production, 1956	
	1956		1956			1956		1956	
Field crops					Vegetables				
Alfalfa seed	1		48.4		Artichokes	1		100.0	
Alsike clover	4		18.2		Asparagus	1		52.0	
Barley	2		18.3		Beans, green lima	1		35.2	
Beans, dry	2		23.5		Beans, snap	4		9.4	
Corn, field	28		0.4		Broccoli	1		62.6	
Cotton lint	3		10.9		Brussels sprouts	1		92.7	
Flaxseed	4		2.2		Cabbage	5		6.5	
Grain sorghums	4		4.8		Cantaloups	1		41.9	
Hay, all	3		6.3		Carrots	1		39.6	
Hops	2		18.6		Cauliflower	1		38.9	
Ladino clover seed	1		93.8		Celery	1		59.4	
Oats	27		0.5		Cucumbers	3		12.0	
Peas, dry field	4		2.0		Honeydew melons	1		71.2	
Potatoes	3		10.7		Lettuce	1		60.1	
Potatoes, sweet	7		5.2		Onions	3		14.3	
Rice	1		24.7		Peas, green	5		5.3	
Sudan grass seed	1		43.3		Spinach	1		34.7	
Sugar beets	1		27.0		Strawberries	1		44.1	
Vetch seed, all	1		32.7		Tomatoes	1		54.5	
Wheat, all	22		0.8		Watermelons	4		8.8	
Fruit crops					Livestock and poultry				
Almonds	1		100.0		Broilers	9		4.0	
Apples, commercial	5		9.2		Cattle and calves	7		4.4	
Apricots	1		94.9		Chickens (farm)	5		4.7	
Avocados (1955-56)	1		58.3		Eggs (chicken)	2		7.4	
Cherries, sweet	1		50.2		Hogs	27		0.5	
Dates	1		98.5 ¹		Honey	1		13.5	
Figs, dried	1		100.0		Milk production	4		5.8	
Grapefruit (1955-56)	2		5.5		Sheep and lambs	2		7.1	
Grapes	1		90.6		Turkeys	1		18.3	
Lemons (1955-56)	1		98.8 ¹		Wool	3		6.7	
Olives	1		100.0						
Oranges (1955-56)	2		28.0						
Peaches, all	1		56.8						
Pears, all	1		54.8						
Plums	1		95.3						
Prunes, dried	1		96.0						
Walnuts	1		96.1						

¹ Percent of national production in 1954 as reported by 1954 Census of Agriculture. More recent estimates not available for states other than California.

Co-ops Partners in California's Marketing Laws*

W. J. KUHRT, Chief
Division of Marketing,
California Department of Agriculture

California enacted its first general marketing law in the depression days of 1933. At that time legislators expressed the basic thought which still prevails—waste and inefficient use of agricultural resources and disorderly marketing of agricultural commodities are not in the public interest.

Since 1933, there has been a steady growth in the number of self-help marketing programs in operation within the State. Many of the earlier programs under the first general marketing act—the Agricultural Prorate Act—were later consolidated under the California Marketing Act of 1937.

During 1956 these programs affected almost 36,000 producers and about 3,250 handlers. The value of commodities regulated that year, measured at the farmer-producer level, was approximately \$474 million. Industries covered spent almost \$8.5 million to carry out the programs, with over \$5 million going for trade promotion.

Marketing co-operatives were among the leaders in early efforts to develop state and federal marketing programs in California. Listed among these were some of the larger co-operatives of the State—Sunkist Growers, Los Angeles; Diamond Walnut Growers, now of Stockton; Sun-Maid Raisin Growers Association, Fresno; and California Fruit Exchange, Sacramento. In the beginning, most programs were designed to control surpluses either by diverting them into pools or by regulating the flow of crops to market. Later minimum grade standards were added to help reduce surpluses and

also to improve quality. Provisions to prevent unfair practices were included from the start.

Origin of Marketing Orders

A 1935 statute provided for advertising and trade promotion on a commodity basis. Authority for research in production, processing, and marketing problems followed. Co-operatives sponsored these statutes also, although some associations doing extensive brand promotion cannot be said to have been wholeheartedly in favor of the commodity advertising and trade promotion provisions. However, the majority was more interested in increasing total commodity sales than in individual brands.

These marketing control programs, like California co-operatives, have come a long way since 1933. Fourteen federal and 29 state programs dealing with approximately 30 different crops are now in effect. In general, state programs provide for quality standards, advertising and trade promotion, and research. Most federal programs include surplus control and minimum quality standards.

Present California laws authorize two kinds of industry self-help programs. Types of regulations and activities are basically the same for both; the essential difference is in the applicability of the regulations.

A "marketing agreement" is a voluntary program instituted by agreement between the State Director of Agriculture and individual producers or handlers of an agricultural commodity. It applies only to the particular individuals who have entered into the agreement.

A "marketing order" or "marketing program" applies generally and uniformly to

* From August, 1957, issue of News for Farmer Cooperatives, published by Farmer Cooperative Service, U. S. Department of Agriculture, Washington, D. C.

all producers or handlers of a commodity. It is issued and made effective by the Director of Agriculture. All but two of the programs currently in effect are "marketing orders."

Development of a marketing program ordinarily takes from three to four months. The first step is for farmers who feel they need marketing help to get together, as individuals or through their co-operatives, and talk over their problems. If they decide to proceed further, they select representatives to discuss their situation with economists in the Bureau of Markets to learn if there are marketing laws which might help them.

Procedure for Formulating an Order

Should a marketing program seem advisable, a voluntary statewide committee of producers is set up. A producer-handler committee is organized if processors and distributors are to be regulated. This committee works out details of the proposed program with the Bureau of Markets and then requests the State Director of Agriculture to call a public hearing. The request must be accompanied by a remittance to pay

the costs of the hearing and the subsequent voting.

The Director of Agriculture obtains lists of producers of the commodity to be regulated by the proposed program and the quantities they marketed in the preceding season, and a list of handlers of the product. He sets a hearing date and mails notices of the hearing, together with copies of the proposed marketing order, to all persons on the lists.

The industry committee is responsible for presenting its case at the public hearing. Testimony is received both for and against the proposed program. After the hearing is concluded, the Director of Agriculture studies the records and makes a finding of fact as to whether the proposed program would be of benefit to producers and handlers of the product. If his finding is in the affirmative, he issues the marketing order in final form and submits it to all producers and handlers for assent.

A proposed marketing order becomes effective only after written assent to it is filed by (1) not less than 65 percent of the producers, by number, representing 51 percent of the volume; or (2) 51 percent of the



Point of sale display provided by the California Fresh Peach and Plum Advisory Board as part of their advertising campaign. Advisory Board photo.

total number, representing 65 percent of the volume.

A program which regulates handlers must be approved by not less than 65 percent of the handlers by number or by volume, except in the case of processors of canned and dried fruit. For this group, the requirement is 65 percent by number and by volume.

Some assents come to the Bureau of Markets through the mail, but, for the most part, the task of obtaining them rests with the industry's statewide committee. Members of the committee, with the help of additional farmers, usually call upon each individual producer to discuss the program with him and to clear up any misunderstandings.

When the Bureau of Markets certifies that sufficient assents have been received to meet the legal requirements, the Director of Agriculture specifies the date on which the marketing order shall become effective. The Director also appoints an advisory board to take over the administration and operation of the program.

Advisory Board Organization

Each advisory board has its own office, with a manager and office and field personnel. The board makes recommendations to the Director of Agriculture for establishing and operating the various kinds of regulations authorized in the marketing order. These regulations may relate to surplus control or the establishment of grade specifications with inspection and certification. Others apply to advertising and trade promotion programs, research activities, and enforcement of unfair practices controls.

No state general funds are appropriated or spent in the administration of industry self-help marketing programs. The industries concerned provide all funds required. The advisory boards are responsible for developing budgets and for recommending rates of assessment to be paid by producers and handlers. Moneys collected are deposited in the California State Treasury, but are allo-

cated in a trust fund to each of the marketing programs concerned.

The advisory boards and enforcement agents of the Bureau of Markets investigate any problems of compliance. If prosecutions are deemed necessary, actions are filed through the Attorney General of the State of California.

Marketing Order Example

The following resume of the Marketing Order for Canning and Freezing Cling Peaches is given as an illustration of a well-accepted program. This order, which originally became effective in 1936, covers all California-produced clingstone peaches used for canning or freezing. It includes regulations involving all the major types authorized by the California Marketing Act—surplus control, grading and inspection, advertising and trade promotion, research, and control of unfair practices.

The surplus control provisions of this marketing order, as amended in 1954, were especially comprehensive. They included control by means of tree removal, green drop or cannery diversion. Quality control was maintained through a minimum size and grade program. The order also covered inspection, advertising and sales promotion, research and acreage surveys. A declaration that contracting for off-grade cling peaches is an unfair trade practice was included.

In 1955, producers operating under the program numbered 2,573; handlers, 55. Administration costs that year were \$130,000; inspection costs, \$300,000; promotional expenditures, \$1 million; and research expenses, \$77,000.

Co-operatives feel that throughout the years the functions of marketing control programs in California have been complementary to their own functions. The programs have helped co-operatives—and other marketing groups as well—established a more stable and sound economic climate in which to serve the farmers of the State.

Some Sheep Health Problems*

DR. ARTHUR G. BOYD, Assistant Director,
California Department of Agriculture

I sincerely appreciate this opportunity to discuss with you some of the problems involved in sheep health.

In this Country, losses due to animal disease and parasitism amount to staggering sums annually. Since the food supply of animal origin constitutes a large share of our national requirements for agricultural products, all of us are faced with the challenge and responsibility of reducing the tremendous losses caused by disease.

* Presented at the ninety-seventh annual convention of the California Wool Growers Association, Stockton, August 8, 1957.

Although vigorous efforts are made to keep diseases to a minimum, the losses are still extremely serious, and will remain so until answers are found to many disease problems. This situation emphasizes the need for expanded research.

The application of knowledge gained through veterinary research has been the determining factor in the development in this Country of an animal industry freed of the plagues that have impoverished other nations. The best brains, skill and investigational facilities must be provided to pursue research under intelligent direction if sheep health is to continue to progress.



FIGURE 1. The School of Veterinary Medicine is located on the Davis Campus of the University of California, 13 miles west of Sacramento. This is a view of the south face of Haring Hall, which houses the school. The present School of Veterinary Medicine was established in 1946 to meet an increasing need for veterinarians in California and to provide research on animal diseases important to California's livestock economy and public health. UCD Office of Information photo.



FIGURE 2. California has one of the newest and finest veterinary schools in the United States. In 1952, 42 students were graduated from the first class of the School of Veterinary Medicine at Davis. UCD Office of Information photo.

Advances in veterinary medicine, as in other fields, will depend on the amount and quality of research work done. In comparison with other fields, scientific progress in animal health has been slow because of inadequate financial support. The training of research specialists is done in postgraduate schools, and few veterinary graduates have the means to pursue such work. This development has been the determining factor in the steady decrease in the number of persons attracted to this field.

If more veterinary graduates are to be properly trained in the techniques of basic and applied research, financial help must be supplied to them. Young veterinarians with aptitude for research should be provided with fellowships to carry on specific projects. Veterinary science cannot do the job alone; the solution to the problem of sheep diseases depends upon support by the industry.

Those of us engaged in animal health work are vitally concerned with the changes brought about in recent years as a result of rapid transportation of livestock over long distances. Now livestock can be moved to

our Country by plane from any part of the world in 48 hours. Over half of all livestock coming into this Country from overseas is now shipped by air. Where animals coming into this Country by ship used to die during the long sea journey, now planes outrun the incubation period of many virulent diseases. Many of the protective measures of the past used in animal disease prevention now fall short of meeting the problems facing us today.

During recent years, we have been confronted with several livestock diseases which are new to this Country, or which have not become established in the past. It has been said that there is never a holiday from the threat of disease. As soon as one disease is conquered, or control is in sight, another springs up to take its place.

Foreign diseases constantly threaten our livestock industry. Here in the West we are mindful of the fact that the last two outbreaks of foot-and-mouth disease in the United States occurred in this area, that two costly outbreaks appeared in recent years in Mexico, and that Western Canada experienced an outbreak not long ago. The

western states are a buffer between the rest of the states and the great Pacific area.

Foreign animal diseases which have appeared in the West and other parts of the United States in recent years have burdened our livestock industry and State and Federal Governments, as well, with great expense and inconvenience. Because eternal vigilance is the price of security, we must be continually alert to prevent the introduction of such diseases into the herds of our Nation.

The sheep industry in our State is undergoing several changes that have a bearing on the health problem. Today we have smaller flocks, many new owners, and irrigated pastures.

Time will permit mention of but a few of the diseases that have a direct bearing on the sheepmen's costs of production.

Bluetongue

This disease is constantly spreading among sheep in California, as well as throughout the Nation. We lack information as to the vectors, as well as other natural modes of transmission. We do not know whether sheep or other species of animals act as carriers, and whether they, insects, or other animals may be reservoirs of the infection. While a vaccine has been developed to prevent bluetongue, the problem of dummy lambs, resulting from the vaccination of pregnant ewes, has discouraged many from vaccinating. Controlled investigational work is indicated in order to clarify these points.

Pneumonia

Of all diseases affecting lambs, pneumonia causes the greatest loss in our State. It is very prevalent in our coast lambs, especially after they have been moved to valley points for feeding. It also occurs in lambs a few weeks of age. Affected lambs do not respond well to treatment, and those that recover are usually an economic loss. We need to know the cause of pneumonia, and of practical methods for its control.

Arthritis (Stiff Lambs)

This disease occurs in lambs of all ages, and causes considerable loss. Several organisms have been recovered from lambs affected with this disease; however, we do not know the primary invader. Information is needed to determine whether the feeder and ewe replacement lambs, which exhibit the same clinical picture as younger lambs,

have the same infection, or if it is due to a different cause.

Caseous Lymphadenitis

This is a chronic disease which affects the lymph glands primarily. Abscesses due to this infection may be found in other tissues, including the testicles and udders. It is sometimes associated with cases of arthritis in lambs. Extensive infection has been observed in some flocks, necessitating the culling of ewes of producing age, and resulting in deaths in older ewes and rams. This disease is of particular importance to the purebred breeder. There is no test to detect the disease in its early stages, nor do we have any preventive treatment.

Foot Rot

Foot rot is indeed difficult to control when it occurs in lambing ewes and ewes with very young lambs. It can be prevented if the sheep are put through a foot bath of copper sulfate at regular intervals. Copper sulfate has been the most efficient preventive, and has given the best over-all results as a treatment, but it is very expensive to use over any length of time. We need to know more about the cause of this disease; a cheaper product for control is desirable.

Coccidiosis

This disease is quite common in lambs from four to ten weeks of age. It is frequently observed in lambs brought in from the intermountain states, and losses are great. The causative parasite will live for a year or more in pastures under favorable conditions. Unfortunately, we have no effective treatment or prevention.

Enterotoxemia

Outbreaks of this disease, sometimes called pulpy kidney, in many instances have been satisfactorily controlled through the use of antitoxins when occurring in young animals. The antitoxins are effective only for a period of from two to four weeks. We are hopeful that a biologic may be developed for the prevention of this disease in lambs six weeks or older. Aureomycin gives some promise as a preventive; however, further trials are needed to test its effectiveness.

Scrapie

We have experienced our most serious and costly epizootic of scrapie among sheep in California during recent months. On two

previous occasions, 1952 and 1955, this dangerous exotic disease was found among sheep in our State. The infection at that time was traceable to sheep brought in from Canada and Oregon. The outbreak this year was traceable to two sources: a ram imported from England, via Canada, and rams from the Broadmead flock, located in Oregon.

On February 20, 1957, typical symptoms of scrapie were observed in a purebred Suffolk ram in a flock of 1,484 sheep located at Dixon, California. This animal was imported from England and had been on the ranch for about three years. The clinical diagnosis was confirmed by our laboratory at Sacramento, as well as the laboratory of the Animal Disease and Parasite Research Branch, U. S. Department of Agriculture, Beltsville, Maryland. Subsequently, a ewe on this place was also determined to have the disease. This flock was one of the foremost Suffolk breeding flocks in the Country, and large numbers of animals had been sold within California, as well as into several other states. All sheep in this flock and those sold or moved out of the flock since February 1, 1954, the date the ram arrived in Dixon, have been appraised and destroyed.

In all, sheep from the Dixon ranch were traced to 278 places in California. These animals, as well as all purebred progeny, have been appraised and destroyed. In addition, sheep had been shipped into 35 flocks located in 12 states. Commercial flocks containing progeny of the infected flock have either gone for slaughter or are being held under "hold order" until the entire lamb crop is slaughtered.

On March 21st, scrapie was found in a Suffolk ram in a commercial flock located near Lincoln, California. This animal came from the Broadmead flock, Oregon. The flock, numbering 2,849, has been disposed of.

On May 10th, our Sacramento laboratory confirmed the clinical diagnosis of scrapie in a commercial flock of sheep located at Chico, California. The infection on these premises was also traceable to an importation from the Broadmead flock, Oregon. Some 7,088 animals have been disposed of from this place.

It should be pointed out that the eradication program was conducted on the basis of the scrapie eradication program outlined by the Animal Disease Eradication Division, Agricultural Research Service, U. S. Department of Agriculture. While final fig-

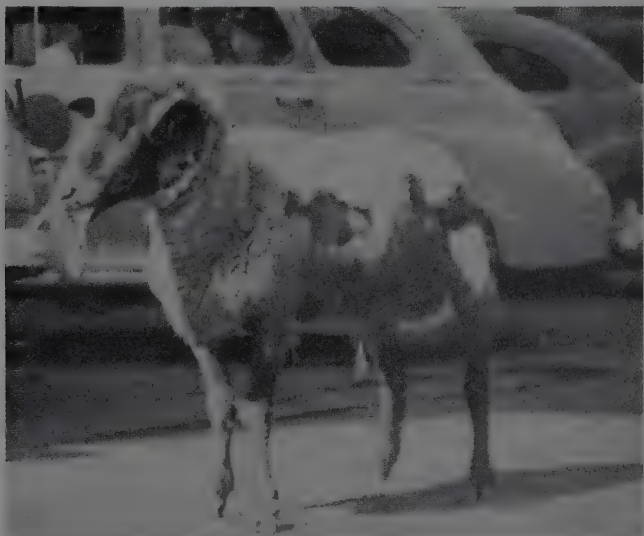


FIGURE 3. Scrapie infected sheep showing spots where wool has been rubbed off, Quarterly Bulletin Photo, Vol. XLII, Number 1, 1953.

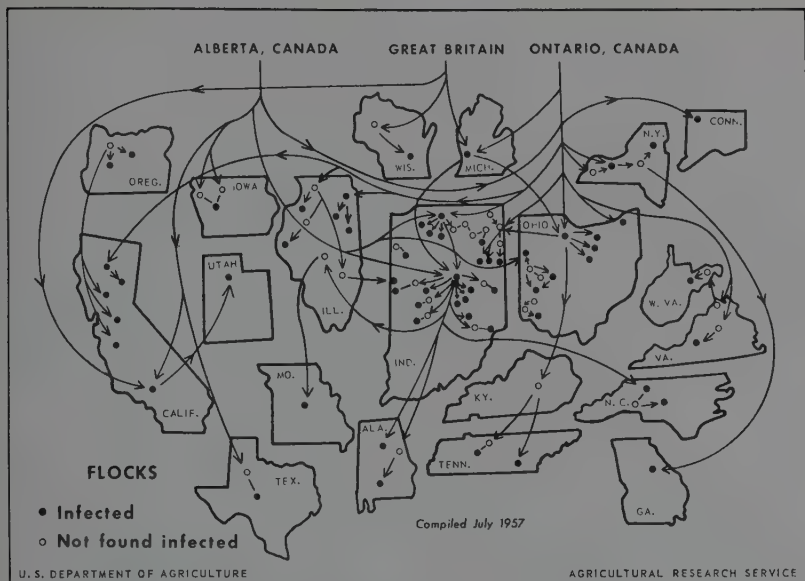


FIGURE 4. Routes by which scrapie may have spread in the United States, 1947-1957. USDA Agricultural Research Service drawing.

ures have not been completed, it is likely the State's share of indemnity will total in the neighborhood of \$223,000. A similar amount of indemnity will be paid by the Federal Government.

The eradication work, as in our past programs with scrapie, was co-operative with the Federal Government. It is pleasing to report that we had the finest of assistance and co-operation from the federal people.

Since two of the cases referred to were traceable to the Broadmead flock, at Amity, Oregon, and the scrapie found in California in 1955 was also traceable to this place, we felt that something should be done to stop the spread of the disease from this source. This problem was taken up with Oregon and federal officials and, as a result, the Broadmead flock has been disposed of.

It is recognized that much more information is needed concerning the nature of scrapie. It is our hope that research will provide, at an early date, improved means of prevention and eradication of scrapie.

It is evident to our people that we cannot stand still at this time and permit our industry to become saddled with this terrible disease.

Some may question the present eradication program. But what better is there to do? One has only to turn to the experiences of England and Scotland to see what living with scrapie means. We feel that in the light of present knowledge our Country is doing the right thing in adopting methods similarly used by Canada, Australia and New Zealand in coping with scrapie.

This is the third outbreak in California in recent years. This serious foreign disease has occurred in some 60 flocks, located in 18 states, since 1947, and is a threat to the welfare of our Country's sheep industry.

We urge that the United States Department of Agriculture undertake research on scrapie at an early date in the hope that knowledge will be developed to destroy the foothold that this disease has attained and to keep our sheep industry free of the disease in the future.

Dwarf Bunt of Wheat and Grasses

RUBEN DURAN¹

Dwarf bunt, a destructive fungus disease of wheat and grasses, is known to occur in the main grain-growing areas of the United States. For several decades, the casual organism of dwarf bunt, *Tilletia contraversa* Kühn, has been recognized as distinct from the common bunt pathogen of wheat, *Tilletia caries* (DC.) Tul. An old collection of diseased wheat plants deposited in the U. S. National Fungus Collections and collected by H. B. Humphrey in 1917 near Jacksonville, California, in Tuolumne County, has been found to contain dwarf bunt spores. This finding becomes important from the standpoint of the potential establishment of a disease in a state where it has not been known heretofore and apparently has not been recognized since. Moreover, it is possible that in certain years climatic prerequisites for the development of dwarf bunt may prevail around Jacksonville. This new record is thus of academic as well as of practical interest.

Diagnostic Signs and Symptoms

Various names have been used to describe the symptoms of dwarf bunt. Among these are "dwarf smut," "short smut," "stubble smut," and, perhaps most popularly, "dwarf bunt." These names allude to the shortened or dwarfed culms and the stubblelike appearance of the plant bases owing to excessive tillering. It should be noted that certain races of the common bunt organism also dwarf their hosts. In any case, microscopic examination of spores mounted in Shear's mounting medium² and viewed through oil

immersion lenses should quickly produce a positive identification. Plate 1, upper, shows a photomicrograph of spores of the casual organism much enlarged.

The spore masses are found in the ovaries of the diseased plants with all of the ovaries infected in the spike. Also the characters of the infected heads (hard compact sori, pronounced spreading of the palea and lemma more so than in common bunt) will aid in recognition. Plate 2 shows dwarf bunt on Orin wheat intermixed with healthy heads. The healthy heads are probably from single seeds which somehow escaped infection. The plants on the extreme right were all heavily infected.

Host Range and Geographical Distribution

Hosts of the dwarf bunt fungus are limited to the grass family (Gramineae). The table on opposite page lists these hosts by scientific and common name and lists the states where these hosts have been found to be infected.

Causal Organism

Recently Duran and Fischer (2), after studying hundreds of herbarium and field specimens, concluded that *T. contraversa* represents a legitimate although complex species and should embrace under this same binomial all bunt fungi of similar morphology. Accordingly, an *emended* description of the fungus follows (2) preceded by an up-to-date list of synonyms.

Accepted scientific name:

Tilletia contraversa Kühn—In Rabenh., Fungi Europaei. Hedwigia 13:188-189, 1874 *emend.*

Synonyms:

Tilletia caries Auct. p. p.

Tilletia secalis Auct. p. p.

Tilletia tritici Auct. p. p.

Tilletia calospora Pass. Nouvo Giorn. Bot. Ital. 9:238, 1877.

Tilletia hordei Körn. Hedwigia 16:30, 1877.

Tilletia panicii Bub. and Ran. Zeitschr. f. landw. Versuch. Oesterr. 1899:545, 1899.

Tilletia tritici nanifica Wagner. Zeitschr.

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Tilletia brevifaciens G. W. Fischer. Res. Stud. State Coll. Wash. 20:11, 1952.

¹ Research Assistant, Washington Agricultural Experiment Station, Pullman, Washington. Presently engaged in a critical taxonomic review of the entire genus *Tilletia*.

The author expresses his appreciation to Drs. G. W. Fischer, C. S. Holton and J. P. Meiners for critical review of manuscript.

² Shear's mounting medium consists of:

2% potassium acetate in water 300 c.c.

glycerine 120 c.c.

95% alcohol 180 c.c.

Spores preferably from an unbroken smut ball are added to a drop of Shear's mounting medium heating gently until the volatile fractions have evaporated; a small drop of glycerine is then added and the material covered with a glass cover slip.

TABLE 1

Host Range and Geographical Distribution of the Dwarf Bunt Organism

Scientific name	Common name	Distribution
<i>Agropyron cristatum</i> (L.) Gaertn.	Crested wheatgrass	Idaho, Oregon
<i>Agropyron desertorum</i> (Fisch.) Schult.	Desert wheatgrass	Idaho, Oregon
<i>Agropyron elongatum</i> (Host) Beauv.	Elongated wheatgrass	Oregon
<i>Agropyron inerme</i> (Scribn. & Smith) Rybd.	Beardless wheatgrass	Oregon
<i>Agropyron intermedium</i> (Host) Beauv.	Intermediate wheatgrass	Idaho, Oregon, Washington
<i>Agropyron sibiricum</i> (Willd.) Beauv.	Siberian wheatgrass	Idaho
<i>Agropyron subsecundum</i> (Link) Hitchc.	Bearded wheatgrass	Idaho, Oregon
<i>Agropyron trachycaulum</i> (Link) Malte.	Slender wheatgrass	Idaho, Oregon
<i>Agropyron trichophorum</i> (Link) Richt.	Wheatgrass	Oregon
<i>Arrhenatherum elatius</i> (L.) Presl.	Tall oat grass	Idaho, Oregon
<i>Bromus marginatus</i> Nees.	Brome grass	Idaho, Oregon
<i>Dactylis glomerata</i> (L.)	Orchard grass	Oregon
<i>Elymus canadensis</i> (L.)	Canada wild-rye	Idaho, Oregon
<i>Festuca elatior</i> (L.)	Meadow fescue	Oregon
<i>Festuca rubra</i> (L.)	Red fescue	Oregon
<i>Lolium multiflorum</i> Lam.	Italian ryegrass	Idaho, New York
<i>Lolium perenne</i> (L.)	Perennial ryegrass	New York
<i>Secale cereale</i> (L.)	Rye	Idaho, Montana, New York, Oregon, Utah
<i>Triticum aestivum</i> (L.)	Wheat	California, Colorado, Idaho, Indiana, Michigan, Montana, New York, Oregon, Utah, Washington

Sori in the ovaries, usually infecting all of them, mostly globose to broadly ellipsoid but varying with different hosts, covered by the pericarp; spore mass dark grayish brown to almost black, often rather agglutinated; host plants usually considerably stunted but varying somewhat with different hosts and perhaps with biotypes of the organism.

Sterile cells fewer and on the average smaller than the spores, regularly globose, with smooth walls, hyaline or faintly greenish or brownish, sometimes encased in a hyaline gelatinoid sheath 2-4 μ thick, 9.5-21.0 μ in diameter, including the sheath.

Spores mostly globose or subglobose, and varying in shades of yellowish brown, reddish brown or grayish brown; exospore usually adorned with rather large regular polygonal reticulations 3-5 μ in diameter, but with occasional biotypes showing irregular to subcercbriform markings, 1.5-2.5 μ high and embedded in a hyaline gelatinoid sheath 1.5-4 μ thick; spores in most collections 19-24 μ in diameter, but occasionally as low as 17 μ or as high as 26 μ including the sheath.

Historical

In 1935, Young in Montana (7) described what he believed was a new variety of the common bunt organism. He noted the more prominent reticulations formed by deeper and generally larger areolae than in the spores of *T. caries*. He mentioned the inability of the spores to germinate readily in water agar at 12° or 25° C. He also observed that diseased wheat culms were extremely dwarfed, attaining heights of 3-18 cm. These are characters that differ from those described for the common bunt organism.

Based on knowledge concerning the dwarf bunt organism at that time, Young's

suggestion that a new variety of the common bunt organism might be involved was not without some justification. However, based on present knowledge of spore morphology, germination studies, and disease symptoms, it seems certain that Young was not working with a varietal form of the common bunt organism, *T. caries*, but with the dwarf bunt organism, *T. contraversa*.

A critical microscopic examination made at Washington State College of a part of Young's original material indicates there is little doubt that Young's disease specimens and spore material are those of the fungus, *T. contraversa*.

Conners (1) originally suggested that dwarf bunt of wheat might have been contracted from wild relatives of wheat (*Agropyron* spp.) in the mountainous areas of Europe and subsequently introduced into North America.

Recently Duran and Fischer (2) and Fischer and Duran (3) uncovered new records of early and/or geographic distribution of dwarf bunt of wheat in America. These workers also extended our knowledge of the host range of the fungus. The new records include: New York, about 1860; Michigan, 1890; Indiana, 1917; California, 1917; Utah, 1918; Idaho, 1918; Oregon, 1921. These records extend our knowledge of the existence of dwarf bunt of wheat well beyond the previously established date of 1931.

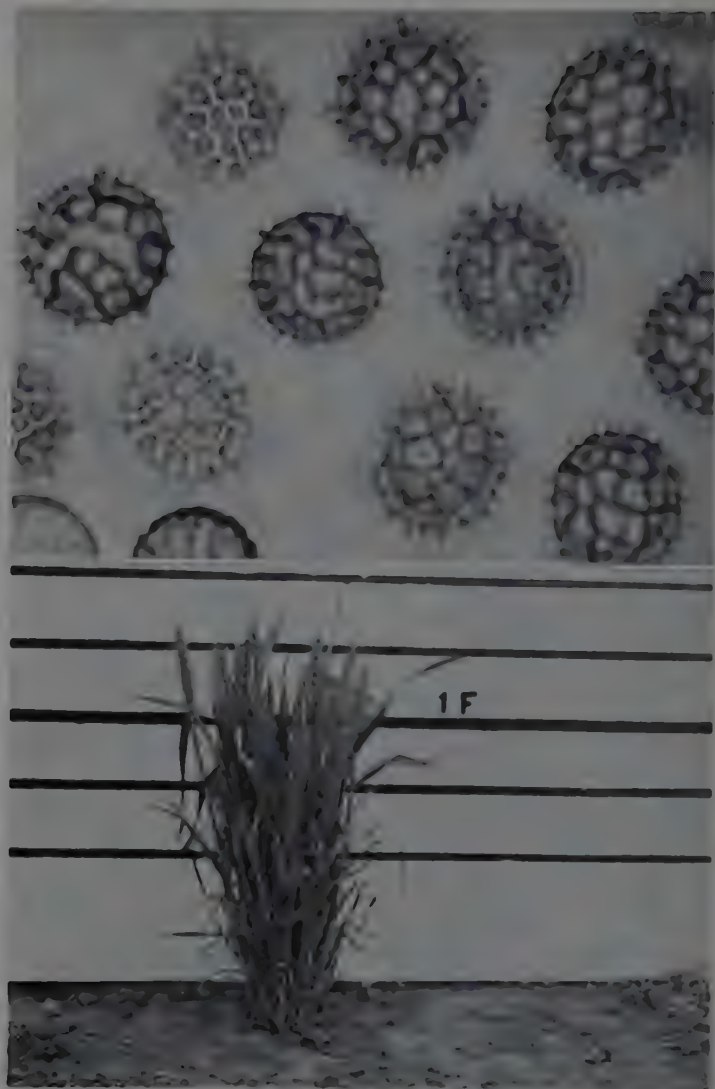


FIGURE 1. Upper. Photomicrograph of spores of the dwarf bunt organism. Differences in focal planes reveal spore morphology in surface and median views. Note the hyaline-pronating envelope surrounding the spores. Lower. Spring wheat severely stunted. Total height approximately 16 inches. Photos of experimental plots of J. P. Meiners, Pullman, Washington.

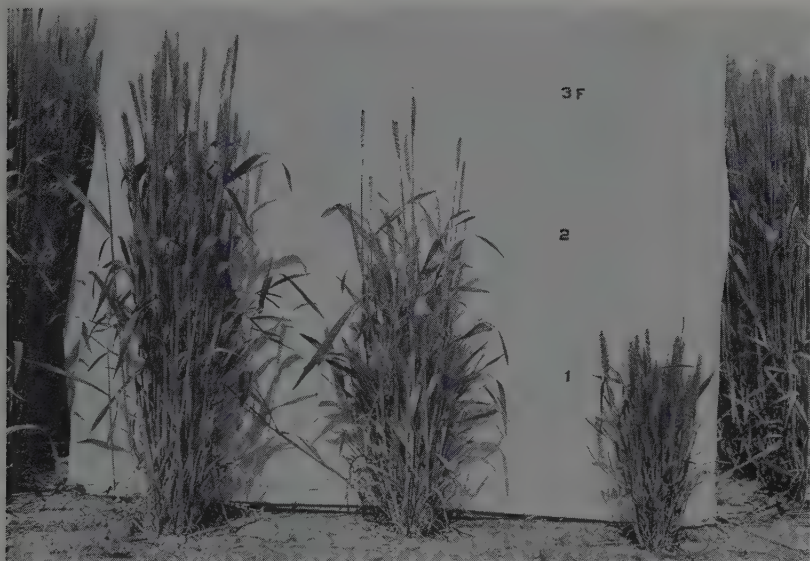


FIGURE 2. Dwarf bunt of Orin wheat showing various degrees of stunting. The severely dwarfed plant on the extreme right is shown in more detail in figure 1. Healthy heads shown with appressed awns towering over indivergent awns and pronounced spreading of lemma and palea. Photos of experimental plots of J. P. Meiners, Pullman, Washington.

Control

Attempts at control of dwarf bunt of wheat have been long and arduous. There are certain fundamental differences between the life cycle of the causal organism of dwarf bunt and the common bunt organism. Standard chemical control measures so successful in combatting common bunt do not control dwarf bunt. However, in 1952, Holton and Jackson (6), showed that hexachlorobenzene applied to infested soil significantly reduced the percentage of dwarf bunt of winter wheat.

It is an established fact that infection by the common bunt organism, *T. caries*, takes place during the early germination stages before the seedlings have pushed through the soil. In contrast, the dwarf bunt organism, *T. contraversa*, infects older seedlings at or near the soil surface. Theoretically, then, chemical control techniques for common bunt and dwarf bunt would require subsurface and nearsurface applications, respectively, for best control (5).

Holton (5) recently reviewed the development of chemical control phases of bunts in the Pacific Northwest. In extensive comparative tests, hexachlorobenzene has consistently proven superior to various other chemicals in controlling dwarf bunt. Further, extensive investigations in the Pacific Northwest over several years indicate that control of dwarf bunt must be aimed at soil-borne inoculum and that infection by such inoculum can be significantly reduced most successfully at this time by soil treatment with hexachlorobenzene.

Seed-borne spores of dwarf bunt do not infect the seedling, either because they do not germinate in that season or they germinate too slowly. This is why chemical seed treatment against seed-borne spores of dwarf bunt is ineffective, these spores having no immediate infection potential. Yet seed treatment may destroy these spores, thereby preventing their introduction into noninfested areas.

Pathogenic Specialization

Fischer and Holton (4) report that specialization in the dwarf bunt organism is quite low, having been under observation for several decades before there was any indication of pathogenic specialization. Nevertheless, certain winter wheat varieties once resistant to dwarf bunt are now succumbing to the disease. This fact suggests some degree of pathogenic specialization within the species *T. contraversa*.

Control of dwarf bunt of winter wheat requires a basic understanding of the biology of *T. contraversa*. It is certain that such knowledge will form the basis for yet more successful control of dwarf bunt by use of chemicals, cultural practices, resistant varieties, or any combination thereof.

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1. Conners, I. L. The organism causing dwarf bunt of wheat. Can. Jour. Bot. 32:426-431. 1954.
2. Duran, Ruben, and Fischer, George W. Further studies on the synonymy and host range of the dwarf bunt fungus, *Tilletia contraversa* Kühn. Phytopath. 46:11. 1956.
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LIST OF AVAILABLE PUBLICATIONS, 1957-1958

Administration

- Agricultural Code, 1957.¹
- Agricultural Code Extracts.¹
- Codes and extracts are revised biennially, every odd-numbered year.
- Agricultural Chemicals and Pest Control Business.
- Agricultural Warehouses.
- California Beef Council Law.
- California Seed Law.
- Canning Tomato Standards, Grapes for By-products, Fruit, Nut and Vegetable Standards, Honey Standards, Seed Potato Certification, Egg Standards, Poultry and Rabbit Meat Classes.
- Commercial Feeding Stuffs.
- General Provisions, Agricultural Commissioners, Apiary Inspection, Plant Quarantine, Pest Control and Seed Inspection.
- Grain Warehouse Inspection Law.
- Livestock Disease Control.
- Livestock Marks and Brands, Slaughterers' and Public Sales Yard Licenses, Estrays, Packers and Stockyards.
- Livestock Remedies Law.
- Marketing of Milk and Dairy Products.
- Meat Inspection.
- Poultry Meat Inspection.
- Processors of Farm Products.
- Produce Dealers.
- Production and Processing of Milk and Dairy Products.
- Quarterly Bulletin, California Department of Agriculture.²
- Annual Report, California Department of Agriculture.³
- List of Motion Pictures and Kodachrome Slide-films.
- What We Do: A concise explanation of the functions and duties of the California Department of Agriculture.

Agricultural Statistics

- Field Crop Reports: Grains, hay, beans, rice, flax, potatoes, sugar beets. Issued monthly except January, February and December.
- Grain Stocks: Grains in all positions: Issued quarterly.
- Rice Stocks: Rice in warehouses, and mills. Issued monthly.
- Rice Stocks: Rice on farms: Issued January, April, August and October.
- Fruit & Nut Crops: All major fruits and nuts. Issued monthly.
- Fruit & Nut Acreage: Acreage by counties and varieties. Annual issue.

¹ Agricultural Codes are available only from the Documents Section, California Printing Division, Sacramento 14. Prices furnished on request from the California Printing Division.

² Issued quarterly. Free distribution by request to Office of Information, California Department of Agriculture. Many back issues still available on request.

³ Issued as the April-May-June issue of the Quarterly Bulletin. Covers departmental activities of preceding calendar year.

- Vegetable Crop Notes: All major commercial vegetables. Semimonthly.
- Cotton Reports: Issued monthly July through December.
- Field Seed Crops: Alfalfa, alsike, ladino, sudan, vetch seed, etc. Issued periodically in season.
- Livestock Reports: Livestock and wool, pig and lamb crops, slaughter and market feeding. Issued monthly and periodically.
- Poultry & Egg Reports: Chicken, egg and turkey production and hatchings. Issued monthly.
- Poultry & Egg Reports: Hatchings all chicks, and placements of broiler and fryer chicks. Issued monthly.
- Poultry & Egg Reports: Poult hatchings. Issued weekly.
- Honey Reports: Honey and Wax. Issued weekly.
- Farm Commodity Prices: Major commodities, except vegetables and most fruits. Issued monthly.
- Dairy Bulletin: Milk production and utilization and manufactured dairy products. Issued monthly.
- Annual Summary Reports: Covers each major commodity group listed under Agricultural Statistics.
- Special Releases: Pertains to one or more commodities and occasionally includes long-time statistical series. As issued.
- Manufactured Dairy Products, Milk Production, Utilization & Prices: Issued as special publication of California Department of Agriculture. Annual publication.

Chemistry

- Fertilizing Materials: Special publication, annual issue.
- Pesticides: Special publication, annual issue.

Entomology

- Insect Pest Control Manual: This publication is a continuing one, with approximately 32 pages being added yearly, usually 16 pages each six months. There are no complete back issues available. Each page describes an insect, its economic importance, principal hosts, distribution, life history and habits, together with control recommendations.
- Delayed Dormant Spring and Summer Spray Schedules: Fruits and nuts. Issued once a year. Back issues available, but considered to be obsolete and of no particular value.
- Commodity Treatments: A compilation in manual form of insect life history, survey, control and treatment information. Back issues available. New pages are added from time to time.

Field Crops

- Public Grain Warehouses Registered for the Year: Issued annually.

Livestock Identification

- California Cattle Brands—1954: Issued once every decade. Available from Documents Section, California Printing Division, Sacramento 14. Price: \$7.73 incl. tax and mailing.

California Cattle Brands Supplement: Issued annually. Available from Documents Section, California Printing Division, Sacramento 14. Price furnished on request.

Market News

Current Market Information: The Bureau of Market News, in co-operation with five commodity divisions of the Agricultural Marketing Service, United States Department of Agriculture, operates in California as the Federal-State Market News Service. This agency publishes approximately 140 series of daily, semiweekly, weekly, monthly, seasonal, and annual reports from 20 offices scattered throughout the State. These market reports include current information as to prices, rail and truck shipments, market receipts, storage holdings or movements, volume of sales, and other related information. Most reports also contain concise descriptive summaries of market conditions. Current or historical reports issued by the Federal-State Market News Service are mailed free upon request to trade associations, business organizations and individuals who have need of them. To receive such reports, outline your needs in a request directly to California Department of Agriculture, Federal-State Market News Service, 1220 N Street, Sacramento 14.

Markets

Marketing Survey Report No. 2: Broadening the Market for California Early Apples.
Marketing Survey Report No. 5: Problems and Possibilities of Expanding the Sale and Consumption of Turkeys in California.
Marketing Survey Report No. 7: Expanding the Sale of Lemon Juice Products for Home Use.
Marketing Survey Report No. 8: Food Trade Marketing Survey for Canned Ripe Olives.
Marketing Survey Report No. 9: Expanding the Consumption of California Honey.
Marketing Survey Report No. 10: Expanding the Consumption of California Standard (Large) Lima Beans.
Marketing Survey Report No. 11: Processed Asparagus Marketing Survey.

Marketing Survey Report No. 12: Expanding the Market for Processed Boysenberries.
Marketing Survey Report No. 13: Survey on Merchandising California Prunes in Retail Food Stores.
Marketing Survey Report No. 14: Expanding the Market for California Long White Potatoes.

Meat Inspection

Some Sanitary Aspects of Meat Plant Construction: Issued as Departmental Special Publication No. 228—1948.
California Meat Inspection: Annual report of bureau activities.

Plant Quarantine

Directory of Nurserymen and Others Licensed to Sell Nursery Stock in California: Issued annually as a Department of Agriculture special publication.
Circular of Information: Nursery Service release. Issued biennially.
Summary of Traffic Entering California Through State Border Quarantine Stations: Issued monthly.
Yearly Summary of Border Stations Traffic Report: Issued annually.
Resume of California Quarantine Restrictions Which Affect the Movement of Fruits, Nuts, and Vegetables From Other States: As issued.
Resume of California Quarantine Restrictions Which Affect the Movement of Propagating Material From Other States: As issued.

Weed Control

Weed and Seed Handbook: As issued.
Weeds of California: A clothbound book by W. W. Robbins, M. K. Bellue, W. S. Ball, California Department of Agriculture, 1951—548 pp. Price: \$5 plus tax and mailing. Available from Documents Section, California Printing Division, Sacramento 14.

Requests for publications may be addressed to:
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California Department of Agriculture
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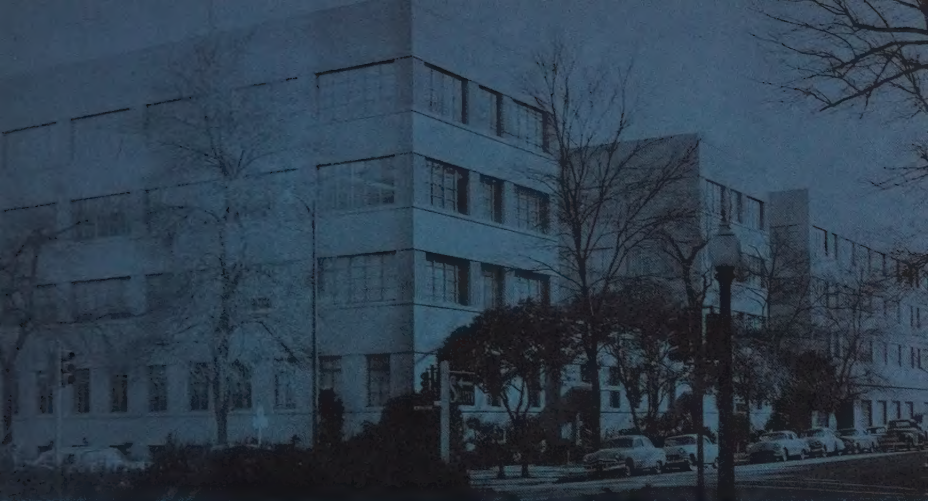
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